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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,701	08/31/2001	Jun Kawaguchi	M 6712 HST/NI PCT/US	1007
38857 7590 05/03/2007 WOODCOCK WASHBURN LLP CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER ZHENG, LOIS L	
			ART UNIT 1742	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/914,701	<b>Applicant(s)</b> KAWAGUCHI ET AL.	
	<b>Examiner</b> Lois Zheng	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,6-11,13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6-11,13 and 15-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 March 2007 has been entered.

### ***Status of Claims***

2. No claim amendments are made in view of applicant's response filed 21 March 2007. Therefore, claims 1, 6-11; 13 and 15-25 are currently under examination.

### ***Status of Previous Rejections***

3. The rejection of claims 1, 6-11, 13 and 15-25 under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. US 6,235,180 B1 is withdrawn in view of the certified translation of Japanese priority document filed 21 March 2007.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 6-11, 13 and 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonoda et al. US 4,874,480(Sonoda) in view of Heller et al. US 3,619,300(Heller).

Sonoda teaches an electrolytic conversion coating bath comprising 1-50g/l of zinc, 3-140g/l of phosphate and nitric acid(abstract, col. 2 lines 18-30). Sonoda further teaches that its conversion coating solution does not cause sludge formation(col. 4 lines 39-41).

However, Sonoda does not explicitly teach that its nitric acid is present in the claimed amount.

Heller teaches a zinc phosphate coating solution that does not form sludge(col. 2 lines 70-73). Heller's coating solution comprises zinc, phosphate, and nitric acid(col. 3 lines 15-32). Heller further teaches that the weight ratio of nitrate ions to phosphate ions should be in the range of 1:1 to 4:1 in order to provide sufficient sludge prevention (col. 4 lines 13-24).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the nitrate to phosphate ion ratio of 1:1 to 4:1 as taught by Heller into the conversion bath of Sonoda in order to sufficiently prevent sludge from forming as taught by Heller.

Regarding claims 1, 22-24 and 25, the zinc and phosphate concentrations as taught by Sonoda overlap the claimed zinc and phosphate concentration ranges satisfied by the claimed mathematical conditions. In addition, based on the nitrate to phosphate ion ratio of 1:1 and 4:1, nitrate ion concentration in the coating bath of

Sonoda in view of Heller is calculated to be 3-560g/l, which overlaps the claimed nitric acid concentration range. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed zinc, phosphoric acid and nitric acid concentration ranges from the disclosed ranges of Sonoda in view of Heller would have been obvious to one of ordinary skill in the art since Sonoda in view of Heller teaches the same utilities in their disclosed zinc, phosphate and nitrate concentrations ranges.

Regarding claim 6, based on the zinc and phosphate ion concentration as taught by Sonoda in view of Heller, the zinc to phosphoric acid ratio in the coating bath of Sonoda in view of Heller would have overlapped the claimed zinc to phosphoric acid ratio of less than 0.91. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed zinc to phosphoric acid ratio range from the implicitly disclosed range of Sonoda in view of Heller would have been obvious to one of ordinary skill in the art since Sonoda in view of Heller teaches the same utilities in their implicitly disclosed zinc to phosphate ratio range.

Regarding claims 8, 16 and 19, Sonoda further teaches that the coating bath is applied to a metal surface electrolytically. Therefore, the claimed processing steps would have inherently taking place in the process of Sonoda in view of Heller.

Regarding claims 9-10, 17 and 20, Sonoda further teaches a coating temperature of 30-80°C and a current density of 0.2-30A/dm<sup>2</sup>(col. 2 lines 39-55), which overlap the claimed coating temperature and current density. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating temperature and current density from the disclosed ranges of Sonoda in view of Heller would have

been obvious to one of ordinary skill in the art since Sonoda in view of Heller teaches the same utilities in their disclosed coating temperature and current density ranges.

Regarding claims 11, 18 and 21, Sonoda further teaches the claimed pretreatment with an aqueous colloidal solution containing titanium oxide(col. 2 line 63 – col. 3 line 10).

Regarding claims 7, Sonoda further teaches the claimed addition of hydrogen peroxide(col. 2 lines 29-30).

Regarding claims 13 and 15, Heller further teaches the addition of alkali metal fluorides and bifluorides in an amount of 0.25-2.5g/l(abstract) in order to allow the coating bath to be operated successively or simultaneously(col. 3 lines 3-7). Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the fluoride compounds as taught by Heller into the coating bath of Sonoda in order to allow the coating bath to be operated successively or simultaneously as taught by Heller. Therefore, the fluoride compound concentration as taught by Sonoda in view of Heller would have overlapped the claimed fluoride compound concentration as recited in claims 13 and 15. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed fluoride compound concentration range from the disclosed range of Sonoda in view of Heller would have been obvious to one of ordinary skill in the art since Sonoda in view of Heller teaches the same utilities in their disclosed fluoride compound concentration range.

***Response to Arguments***

6. Applicant's arguments filed 21 March 2007 have been considered but are moot in view of new ground of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

ROY KING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER SPO